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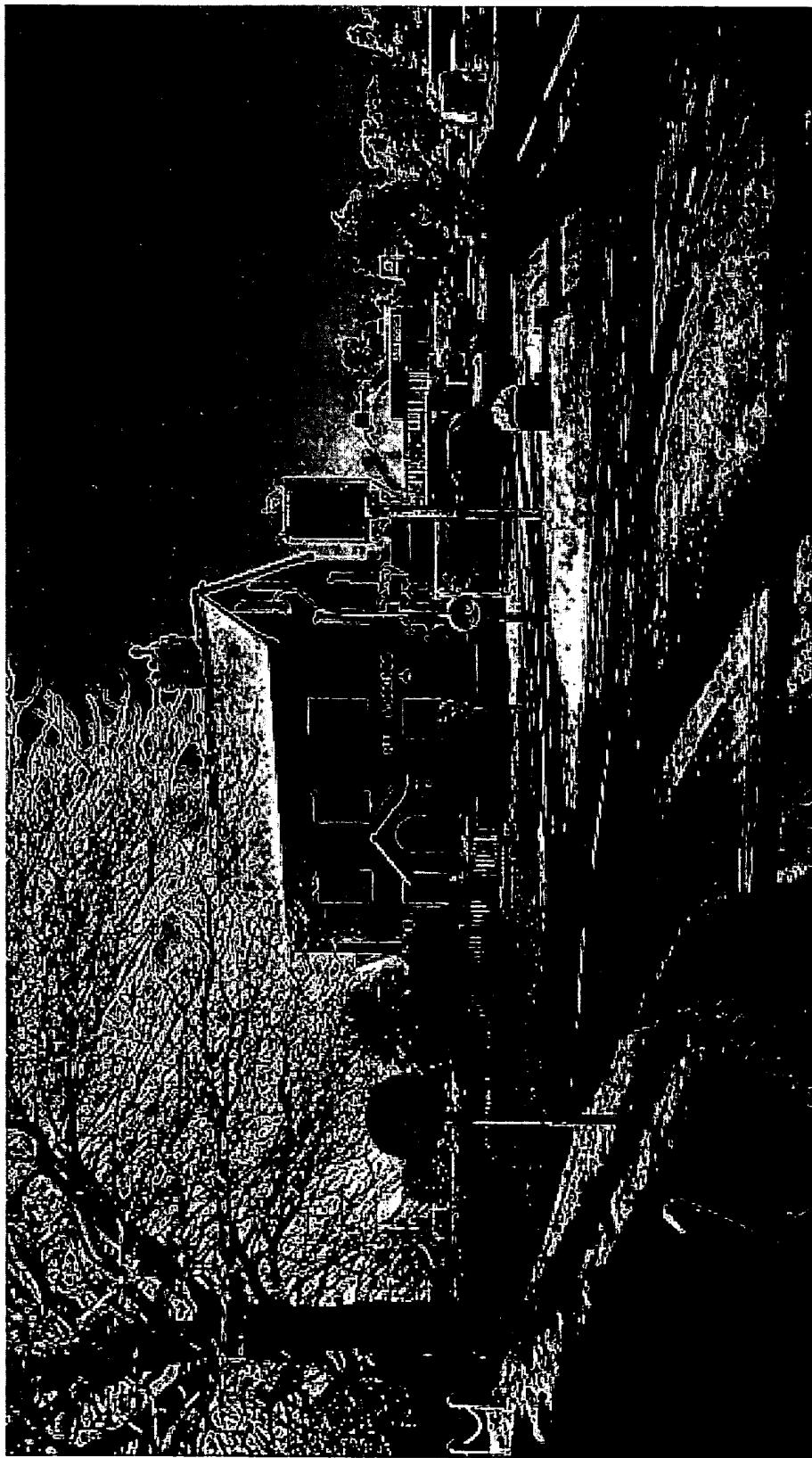
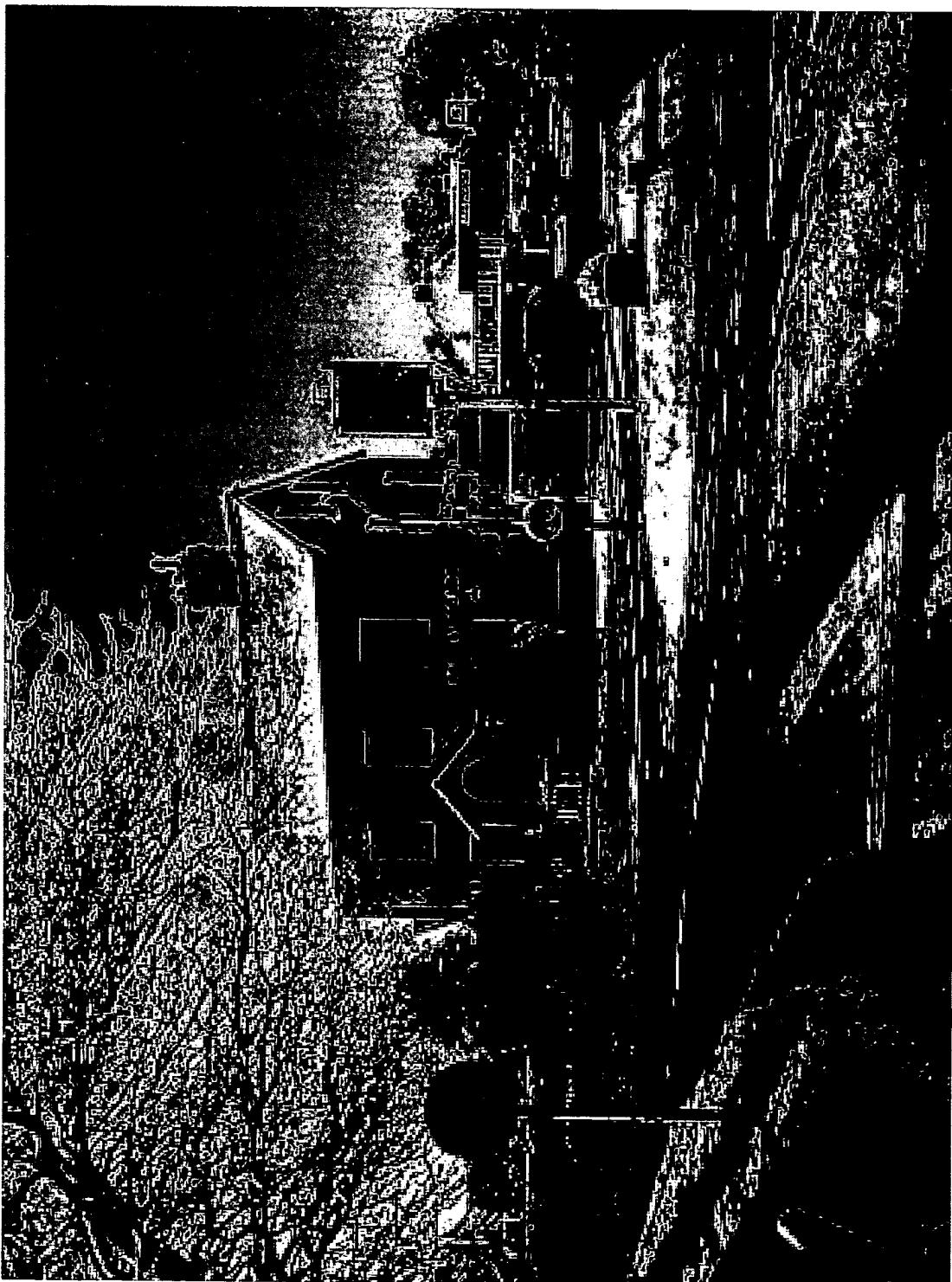


FIG 1 - Widescreen (16:9) Aspect Ratio

- 1 -

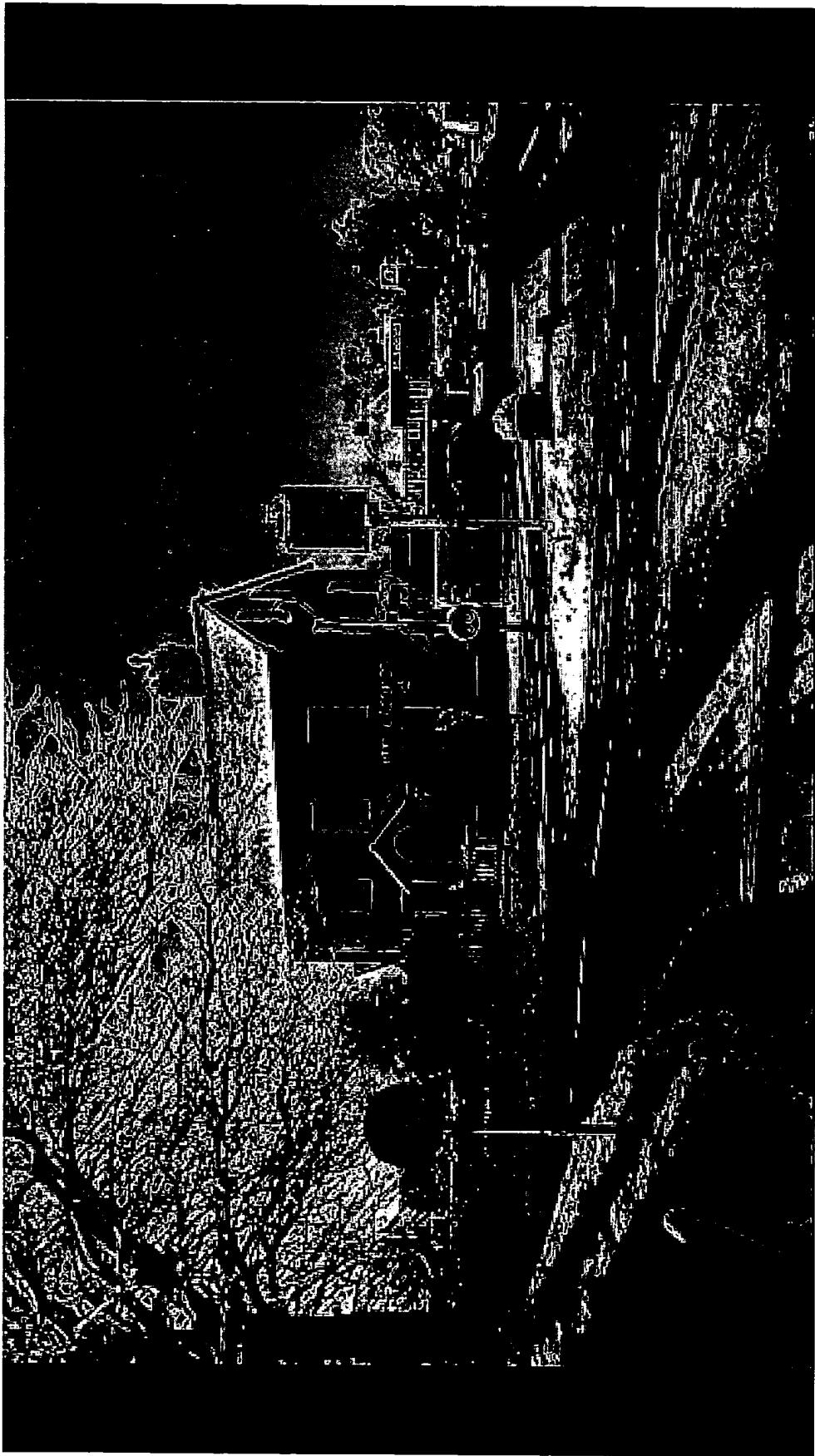
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**FIG 2 – Standard Screen (4:3) Aspect Ratio**

**FIG 3 – Hybrid Aspect Ratio (14:9) Broadcast**



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FIG 4 – Letterbox Display of a Widescreen Image on a Standard Screen HDTV

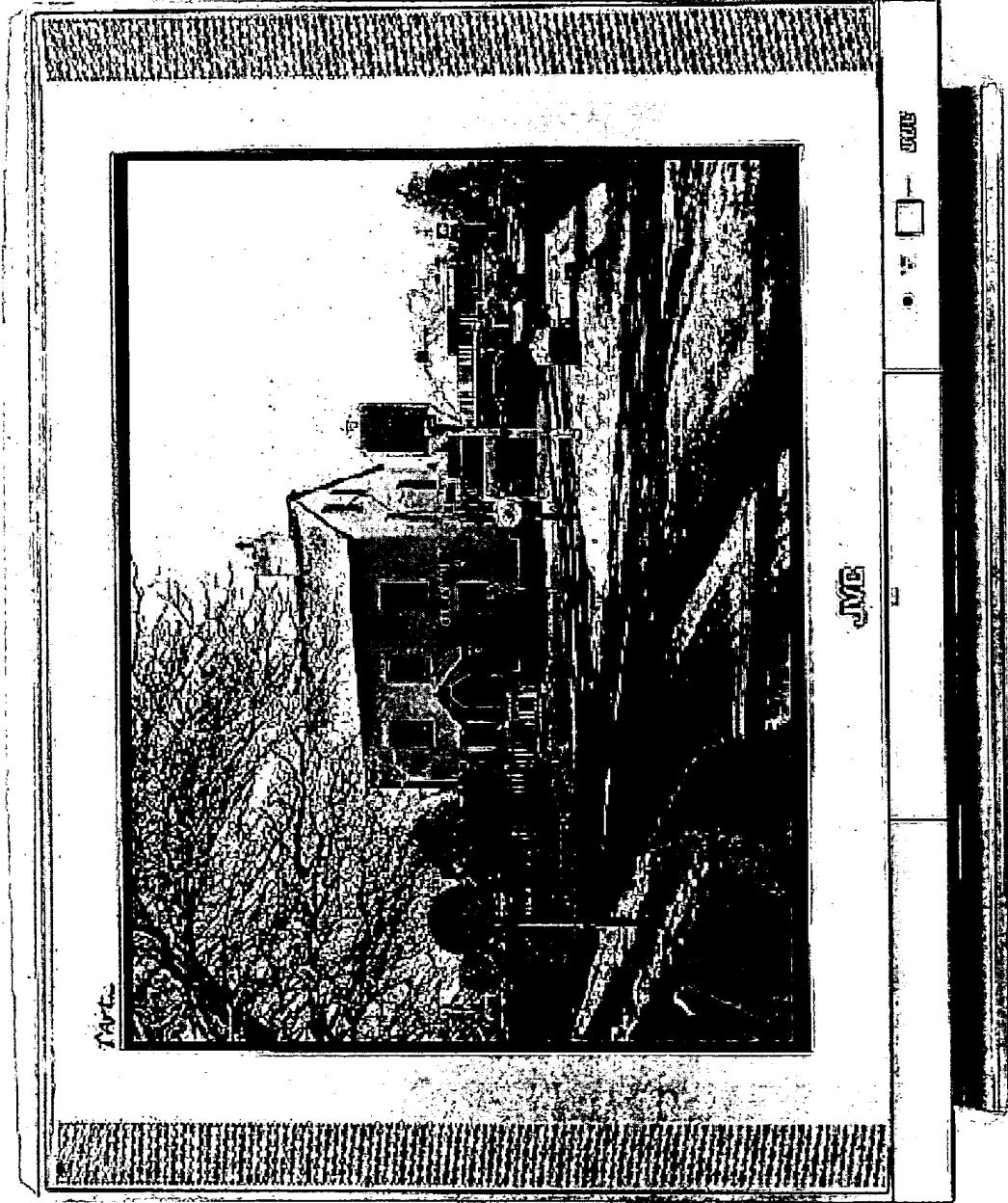
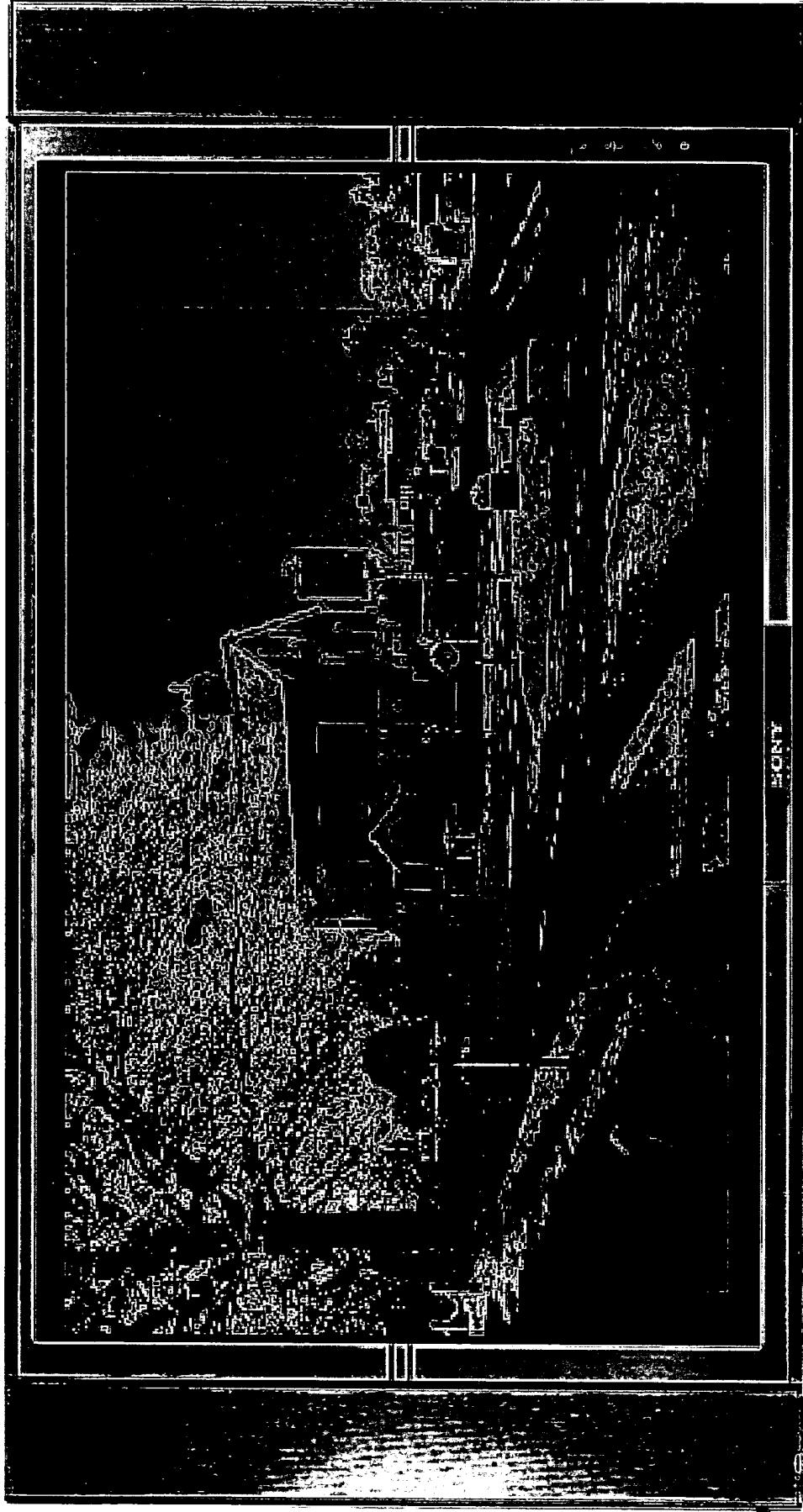


FIG 5 – Full Screen Display of a Widescreeen Image on a Standard Screen HDTV

**FIG 6 – Pillarbox Display of a Standard Screen Image on a Widescreen HDTV**

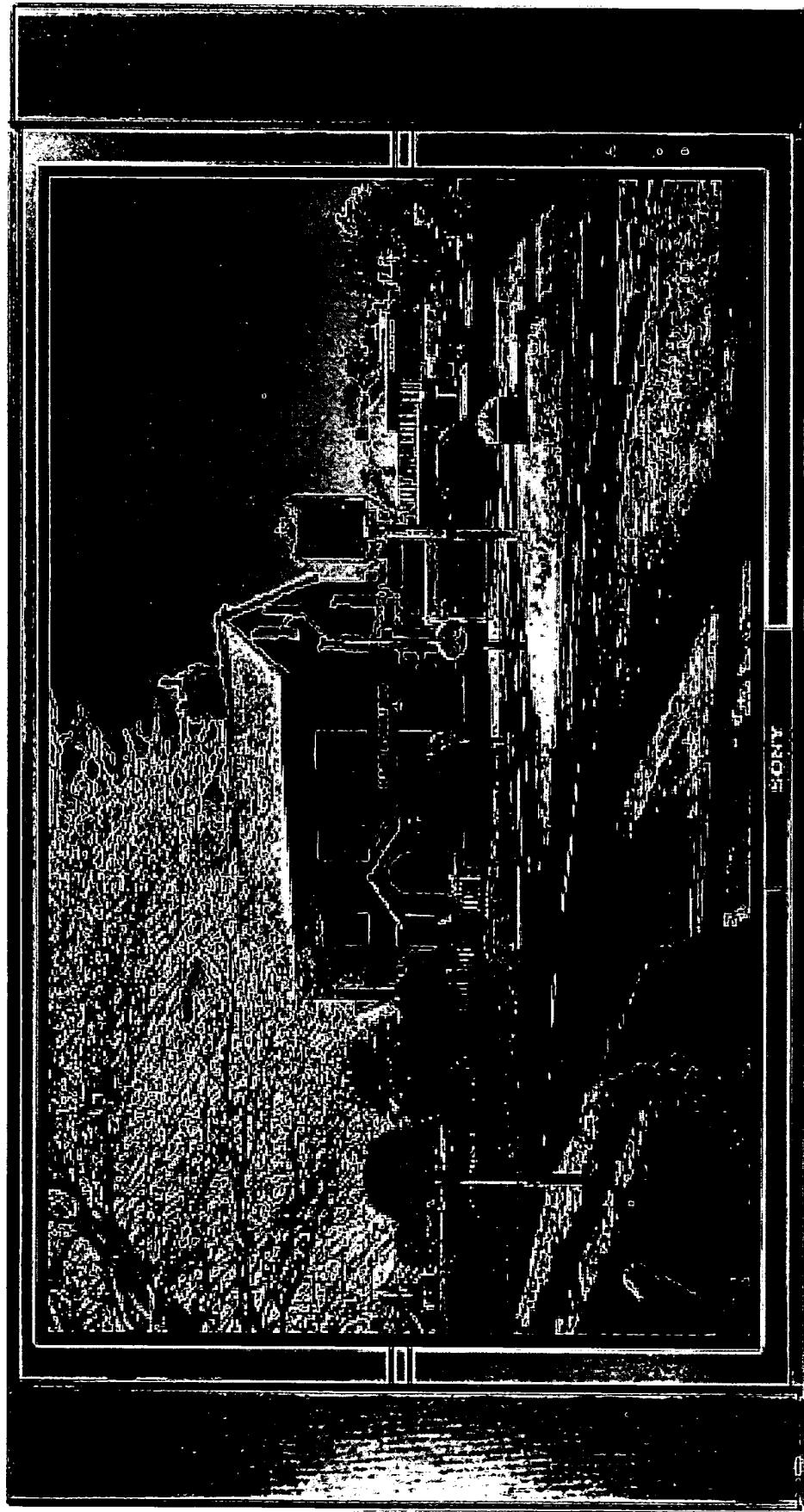


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FIG 7 - An Example of Screen Fade on a  
Widescreen HDTV



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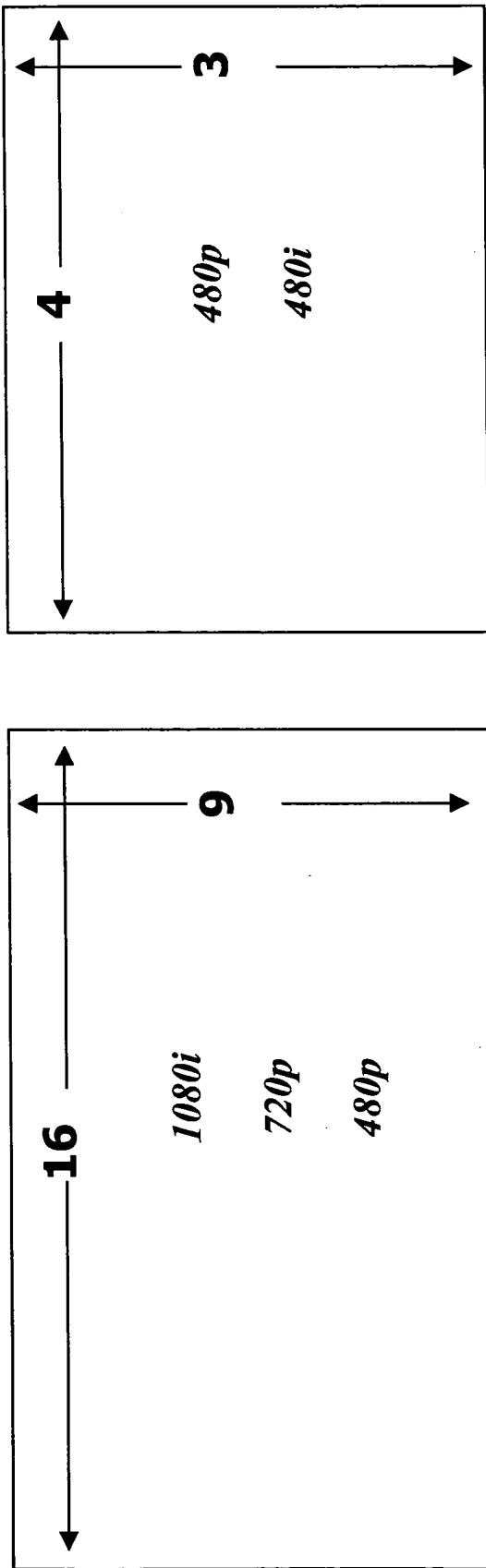
FIG 8 – Linear Stretch Display of a Standard Screen Image on a Widescreen HDTV

**FIG 9 - Zoom Display of a Standard Screen  
Image on a Widescreen HDTV**



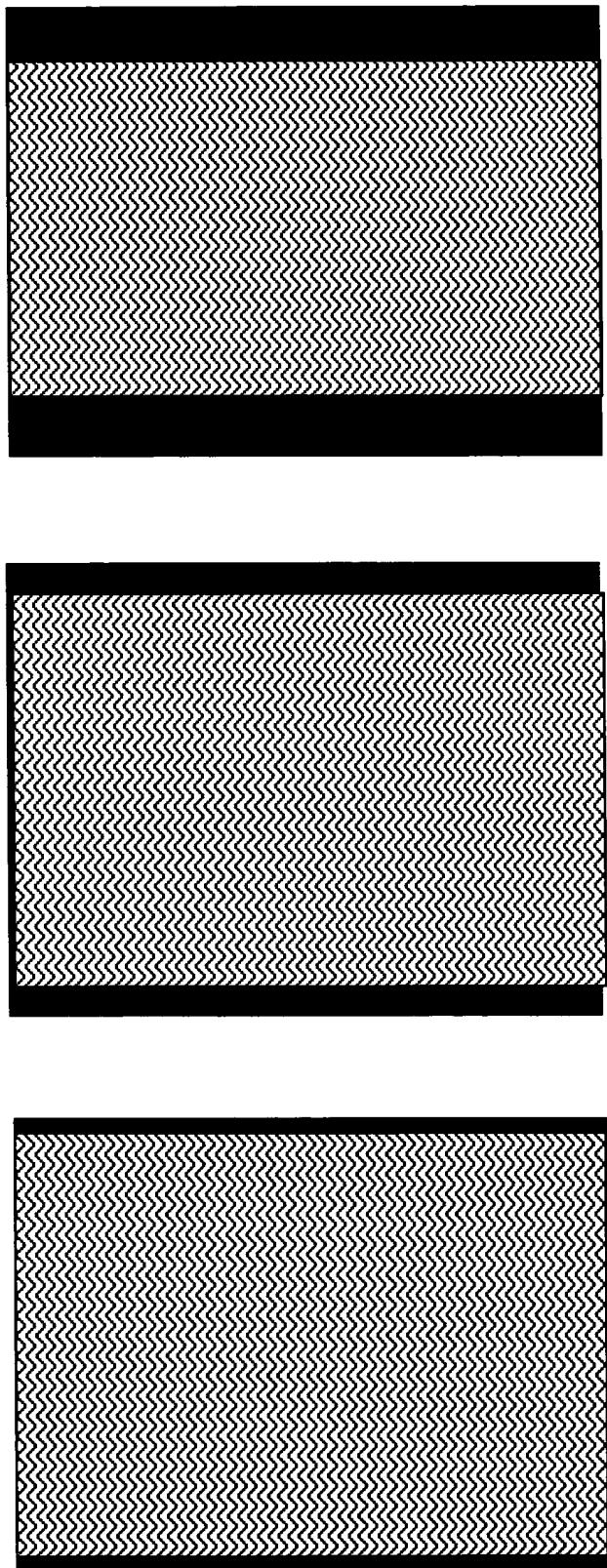
**FIG 10 - DTV Output Formats and Corresponding Aspect Ratios**

- 10 -



### Hybrid Aspect Ratio Broadcasts

FIG 11 – The Common 15:9, 14:9 and 4:3



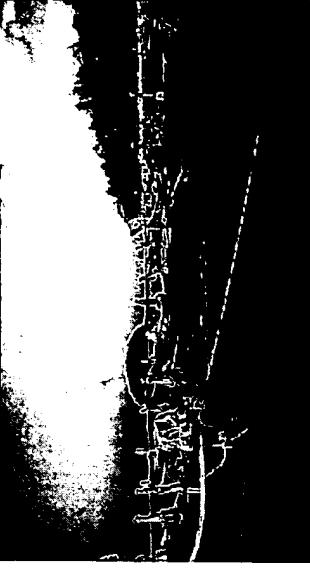
# FIG 12

Representative Images Used to Illustrate the ASTB 16:9 Zoom Modes

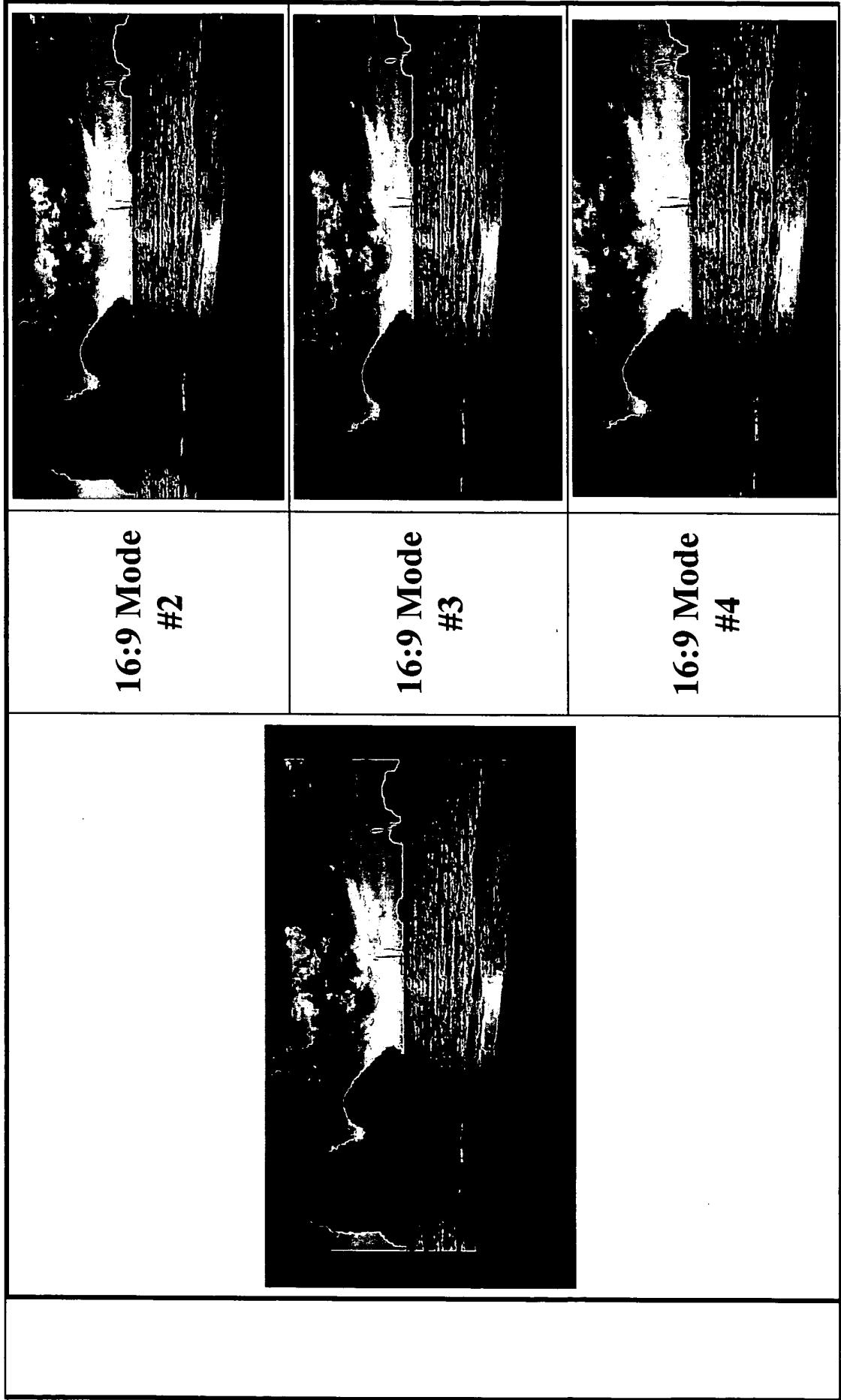
		4:3 Hybrid Aspect Format
		14:9 Hybrid Aspect Format
		16:9 Zoom Mode

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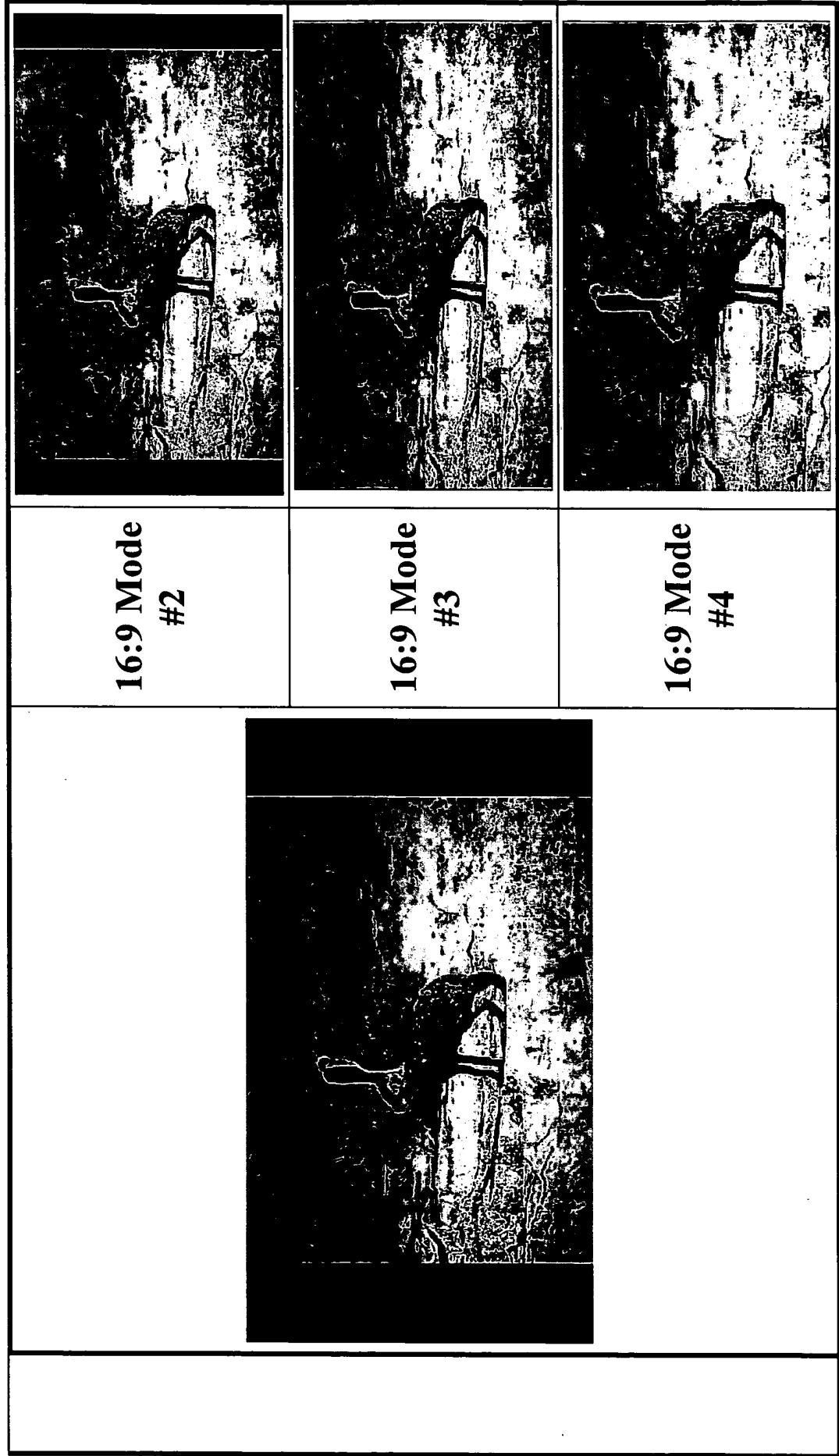
# FIG 13

TV Type	Tuned Program	ASTB Zoom Mode	Television Display
		16:9 Mode #2	
		16:9 Mode #3	
		16:9 Mode #4	
	16:9		

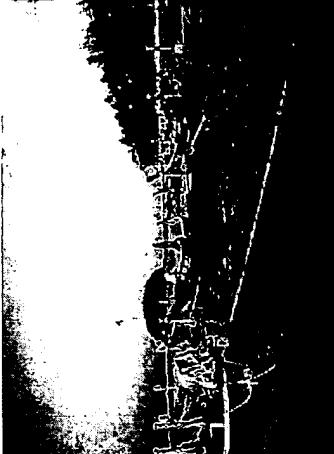
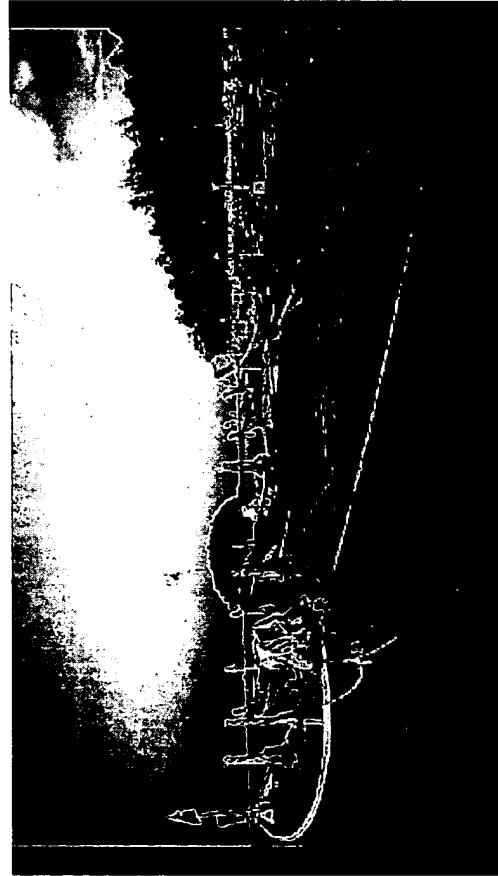
**FIG 14**



**FIG 15**

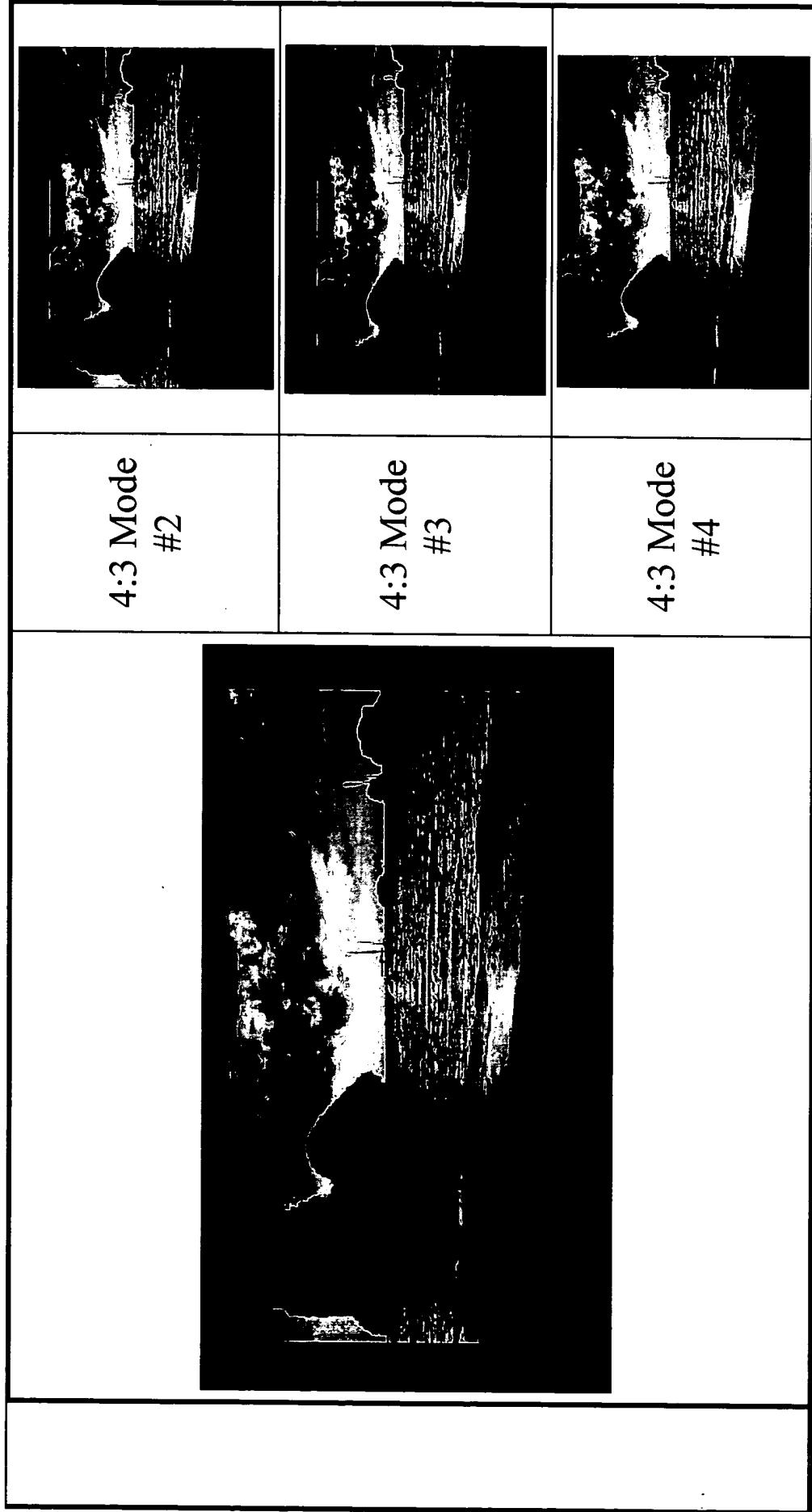


# FIG 16

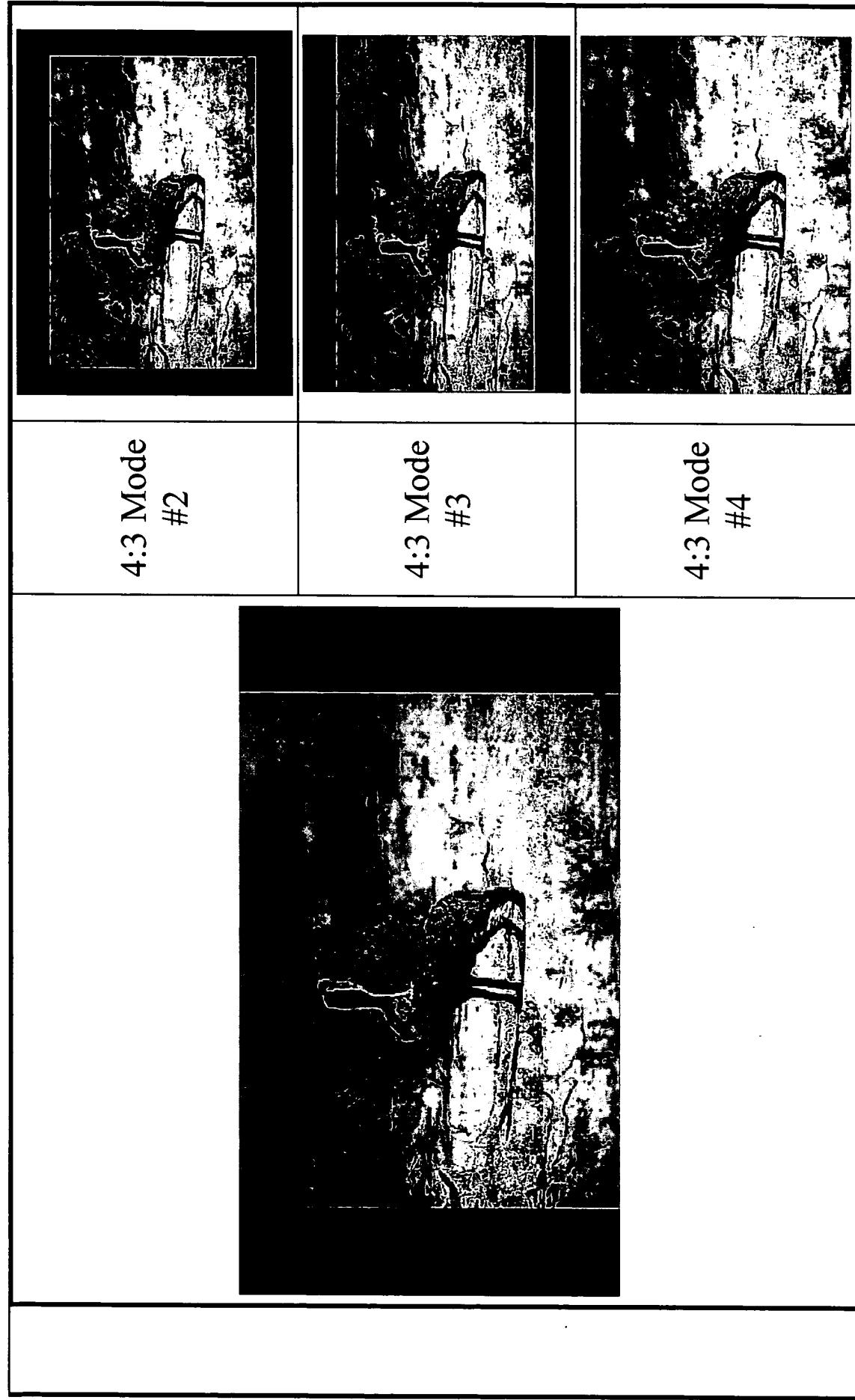
TV Type	Tuned Program	ASTB Zoom Mode	Television Display
		4:3 Mode #2	
		4:3 Mode #3	
		4:3 Mode #4	
		4:3 LB or 4:3 PS	

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**FIG 17**

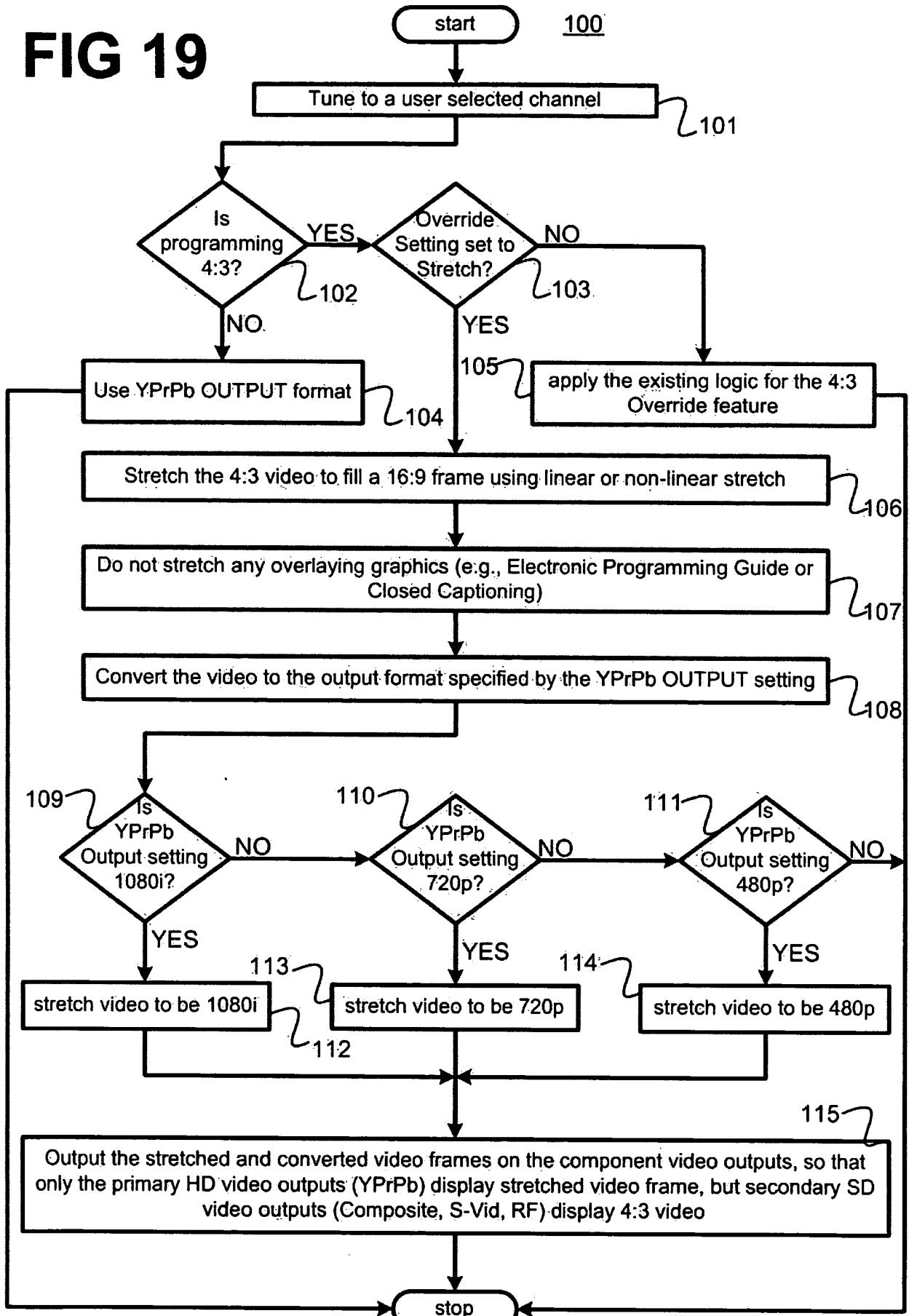


**FIG 18**

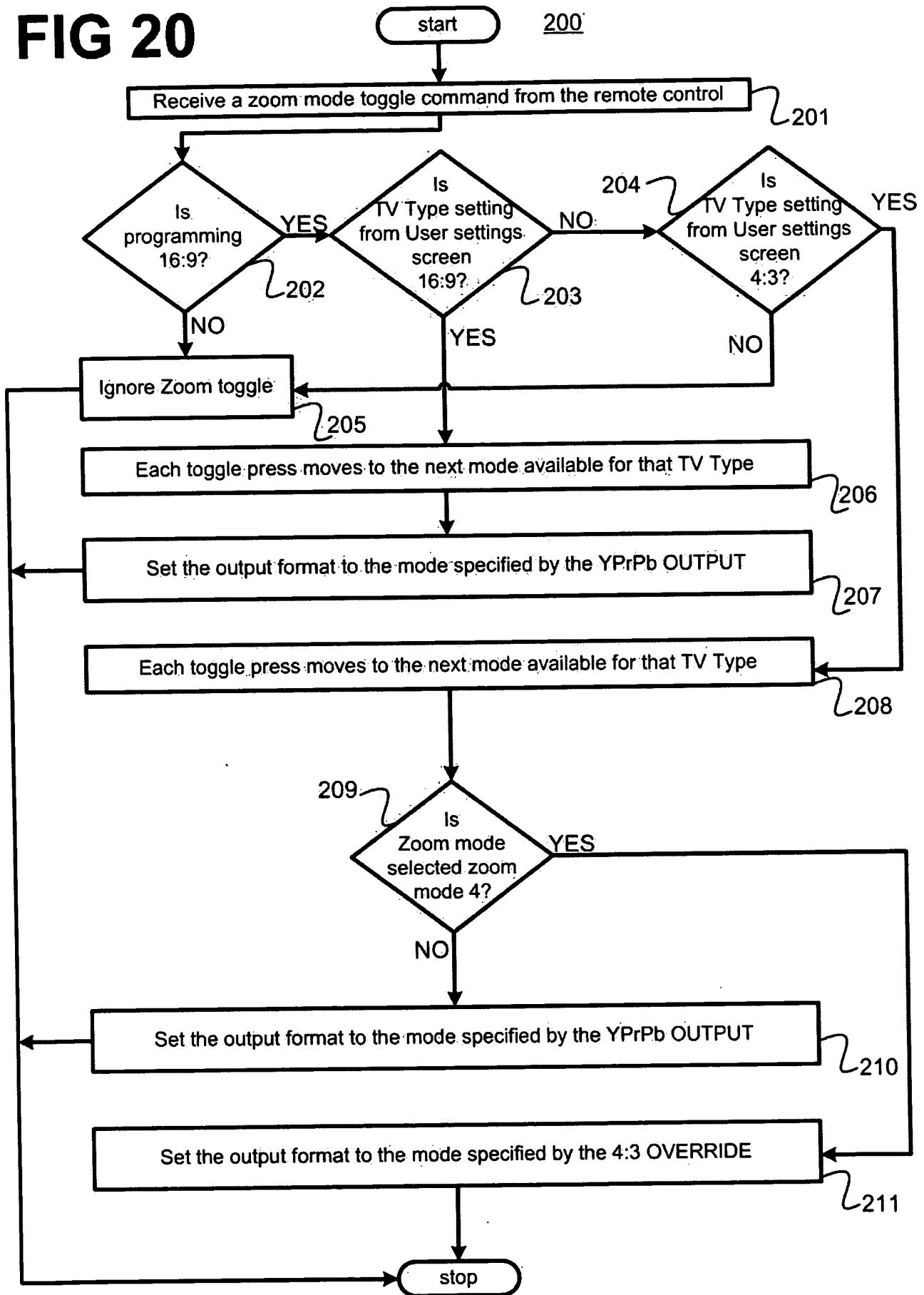


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# FIG 19

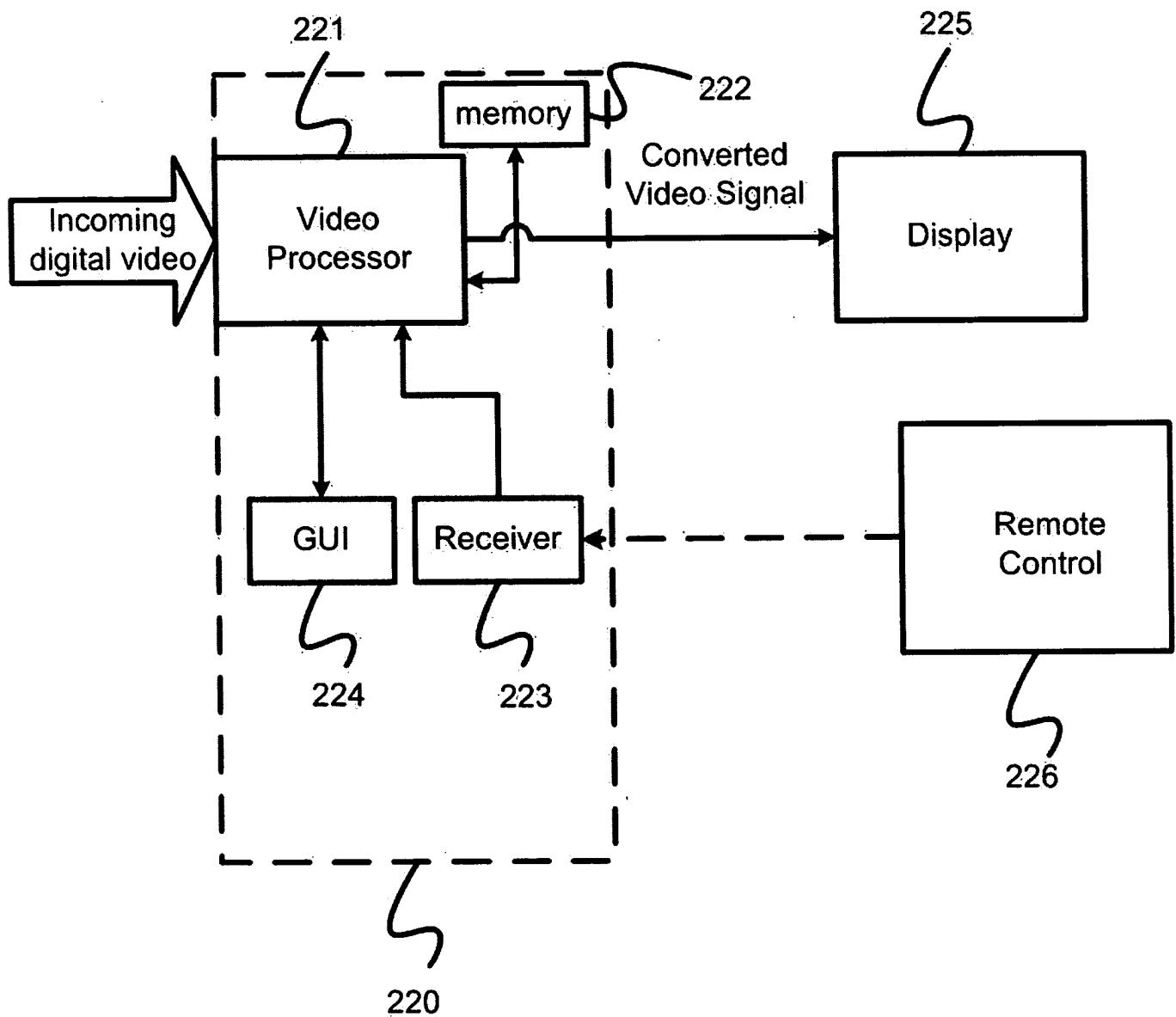


# FIG 20



# FIG 21

230



# FIG 22

start

240

receiving information as to an aspect ratio of the display to which  
the set-top receiver is connected

241

manipulating a received video image in the set-top receiver using a  
stretch/zoom technique to provide at least one customized zoom  
mode guaranteed to fill an entire screen of the display and to  
provide one or more additional zoom modes that are independent  
of the aspect ratio of the display

242

outputting the manipulated video image using one or more ATSC  
formats

243

receiving input from a viewer to select one of the at least one  
customized zoom mode or the one or more additional zoom  
modes, or setting the zoom mode automatically based on the  
aspect ratio of the display without requiring additional input from  
the user

244

stop